UPPER TRISHULI-1 HEP (216MW)			
Client	Doosan Heavy Industries & Construction		
DHI's Subcontractor	Power Construction Corporation of China		
REPLY COMMENT			
Subcontractor	Power Construction Corporation of China		
Incoming Document			
Title of the Document	**Structural Calculation for Inlet Structure of Diversion Tunnel**		
Document/ DrawingNo.	UT1-C-010-CVL-DC-42004	Revision	0A
Review Document No.	**UT1-HEP-DHI-PC-D-0180**	Reviewed Note No.	**RN-0095**
Received Date	**25.03.2022**	Review status	**RR**
Outgoing Document			
Previous Reply No.	**N/A**	Previous Reply Date.	**N/A**
Reply No.	**RC-00XX**	Reply date	**26.04.2022**

Comments

1. The document under review is part of the Design Optimization Proposal process.

2. Chapter 1.1 „Project Profile:

• The cross section is not D-shaped. The flow cross section is a trough cross-section with a width of 5.00m, vertical sidewalls with a height of 3.50m and an arc shaped roof top with a radius of 2.83m.

Reply: The cross section is reversed 'D' shaped type. And the detail description of the inlet structure has been revised please refer to the newly submitted calculation report.

• "The inlet tower of diversion tunnel is bank-tower types…" has to be clarified:

- the intake structure is not an intake tower;

Reply: Accepted. the name of intake structure is named as inlet structure.

- what can be understood with "…bank-towers types…"?

Reply: The description of " bank-towers types " is wrong. It has been revised please refer to the newly submitted calculation report.

• The length of the intake structure is not 3.50m but 9.50m.

Reply: Confirmed and the length of the inlet structure is 9.5m (from the chainage D0-003.5~D0+006.00).

• Figure 1.1.2: The plan shall show the intake structure in its whole length as it is shown in

figure 1.1.1.

Reply: Accepted. The figure has been revised and please refer to the newly submitted calculation report.

3. Chapter 5 Calculation result:

• Floating, bearing and sliding resistances of the intake structure have not been checked. As per site conditions, the intake structure of the diversion tunnel will be situated mostly exposed in the river and is not mostly enclosed in rock, see photo below.

Reply: According to on-site geological condition, the inlet structure is situated on bedrock, and rock type is rock class III. Bearing capacity is greater than 1MPa. Cohesion and Friction Angle of bedrock is about 1MPa and 45° separately. Bearing and sliding stability can meet relevant specifications.

During plugging condition, volume of 1st and 2nd is 244m^3, and the weight is 244×24=5856kN. Uplifting pressure is 9.8×(1250.17m-1243.5m)×70m^2=4575.6kN. Floating resistances can meet relevant specifications. The foundation cleaning of inlet structure of diversion tunnel is as follows:

• During flood season/ during operation while weir gates are open, high flow velocities have to be considered. As the alignment of the intake structure lies almost perpendicular to the flow direction of the Trishuli River, lateral pressure to the intake structure shall be considered.

Reply: According to the on-site photo, the inlet structure is not located in the center of the river. According to site terrain, the structure is at mountain depression, the flow water will not directly impact the intake structure. So in the calculation, only hydrostatic pressure is considered.